for a period of three years in the first instance. The Syllabus showing the course of studies proposed together with the additional establishment required to open the classes as shown in the annexure is approved. The Director of Public Instruction is requested to arrange, in consultation with the Chief Engineer, for the opening of the class immediately as also for the selection of the candidates for admission to the class from those who have successfully gone through the first year's course of the Sub-Overseers' Class and obtained high marks in drawing. The number of students to be admitted to the class may be limited to a maximum of ten as stated in the Public Works Secretary's Note.

3. The allowances recommended for the existing School Staff and the employment of part-time Lecturers are also approved. The selection of outside Lecturers may be made in consultation with the Chief Engineer. The cost on account of the opening of the Draftsmen's Class during the current year including the above allowances is reported to come to about Rs. 2,300 nearly. Half of this amount will be met from the grants for the Krishnarajasagara Works and the other half from the general savings under "23 Irrigation and 24 Civil Works" of the Public Works Department grants.

4. The Public Works Secretary notes that the scale of pay of the Draftsmen has not been revised for over 11 years and that this service compares very unfavourably with that for the Sub-Overseers and that that is also one of the reasons for the service being unattractive. Proposals for the revision of the scale may be submitted separately by the Chief Engineer for orders of Government. All passed students from this class should be absorbed in the Public Works Department against permanent vacancies.

R. RANGA RAO,
General Secretary to Government.

STATEMENT OF THE APPROXIMATE COST OF OPENING A DRAFTSMEN'S CLASS.

ANNUAL RECURRING EXPENDITURE.

Staff.—		Rs.	
One Instructor in Drawing and Estimating	...	75—10—125 or average 108·3.	
One Peon	...	11	
Duty allowance to the Superintendent	...	35	
Do Civil Engineering Assistant	...	30	
Do do Master	...	20	
Do Clerk	...	10	
	Total	214·3	or Rs. 2,571 annually.

	Rs.
Part-time Lecturers in Applied Mechanics, Graphic Statistics	360
Do Architecture ...	360
Drawing Materials, stationery, etc. ...	150
Purchase of Drawing Papers, drawing printed books	30
Contingencies for chalk, dusters, etc. ...	20
Charges for short tours within the Province	100
Total	300

FURNITURE AND INSTRUMENTS.

Initial Expenses.—

Blackboard with stand 1 at Rs. 25	...	25
Teakwood Tables (drawing) with drawers and lock and key 10 at Rs. 35	...	350
Teakwood high stools 10 at Rs. 5	...	50
Table for Instructors 2 at Rs. 25	...	50
R.W. Arm (Rattan) Chairs for Instructors 2 at Rs. 12	...	24
Drawing boards big size 10 at Rs. 28	...	280
Total	...	779

ANNEXURE.

Memo on the constitution and working ... sed to be opened in the School of Engineering, ... e present Chief Engineer.

The course shall extend over fi... will be spent in the First Year Class of the Civil Engine... be preliminary to the Draftsman Course. After the second ... First Year Civil Class, a selected number of students (who ha... for drawing) ordinarily not exceeding ten in number preferenc... rahmins will be promoted to the Draftsman Class. In this clas... e given for two years in Drawing and Estimating, besides, lecture... jects such as Elementary Portions of Architecture, Materials and C... and Irrigation.

2. With regard to tuition fees, depos... admission, scholarship-freeship, leave, discipline, examination, etc., ... present Civil Engineering Section will apply.

3. In the last two year's course, termin... be held in the months of December and April as in the case of other ... ol and the final examination by the Government Board of Examiners ... Course.

4. The subjects of study in the last two ... arks assigned to each shall be as follows :—

Subjects	Marks		Total
	Practical	Examination	
I Engineering.—			
Materials and Construction including Elementary portions of Architecture.	..	50	..
Elementary portions of Irrigation work and Hydraulics.	..	50	..
Applied Mechanics and Graphic Statistics.	..	50	150
II Drawing.—			
Building	40	75	..
Bridge	40	75	..
Irrigation	80	0	410
III Estimating.—			
Building	30	90	..
Bridge	30	90	..
Irrigation Works ..	40	100	380
Physical Exercises, Attendance and General Behaviour.	60	..	60
Total ..	320	680	1,000

Practical marks will be awarded for class work.

To secure a pass, a student should obtain 40 per cent of marks in each group and 50 per cent of the grand total. Those who obtain not less than two thirds of the maximum will be declared to have passed in the First Class and the rest put in the Second Class.

5. Two prizes of the value of Rs. 10 each will be awarded every year to the First and Second students in the Second and Third Year Classes.

6. On the completion of the course, a certificate signed by the Superintendent of the School and countersigned by the President of the Managing Committee shall be issued, stating that the student has passed the final examination and is qualified for employment as a Draftsman.

SYLLABUS.

DRAFTSMAN CLASS.

First Year Civil Engineering Class.)

(1) *Plane Tri*ngles in degrees and radians. Definitions of sine, cosine, e[tc.] of their value. Setting out angles from values of sine, cos[ine] natural sines, cosines, etc. Solution of right angled triangle[s] ing and simple applications to heights and distances.

(2) *Mensuration*s and perimeters of right angled triangles. Rules for finding out le[ngth] of a circle and arcs of segments and sectors. Determinatio[n] parallelogram, circles, sectors and segments of circles, ellipses and [irr]es by middle ordinate and Simpson's rules. Determination of surfa[ces] sms, pyramids, cylinder, cone sphere, zones of sphere and rings. V[olu]id by plotting ordinates representing areas of cross sections. Estim[ate] ces and volumes from actual measurements of objects. Measuremen[t] mes by weight or displacement. Meaning of specific gravity. Practica[l] ement of timber. Calculation of the weight of a body when its volume[s] vity are known. Capacity of a given cask.

RING GROUP.

(1) Building materi[als] tion :—

(*a*) Bricks, tiles and stones. Dimensions and characteristics of good bricks, tiles and stones.

(*b*) Lime, mortar, cement, etc. Slaking lime, preparation of mortar, plaster, white and colour wash and concrete of lime, surki and cement, paints and varnishes, distempers.

(*c*) *Masonry.*—Bricklaying in English and Flemish bonds. Bond at angles of wall in footings at the junction of main and cross walls at door and window openings and in circular pillars. Foundation and footings wood, bricks and plugs.

(2) EARTHWORK AND ROADS.

(*a*) Setting out embankment and cuttings from cross sections on level and sloping grounds. Profiles and modes of forming embankments. Formation of tank bunds. Use of puddle, protection of slopes by turfing or stone pitching drainage of slopes. Computation of contents of earthwork by mean areas and prismoidal formula.

(*b*) Survey, section, formation and maintenance of roads in plains.

SURVEYING GROUP.

(*a*) *Chain, Compass and Plane Table.*—Ordinary surveying with chain compass and plane table. Inaccessible points. Obstructed lines. Use of optical square and cross staff.

(*b*) *Level.*—Manipulation and adjustment of levels. Levelling.

DRAWING GROUP.

(*a*) *Printing and Freehand and Model Drawing.*—Freehand drawing. Printing and drawing from models No. (1).

(*b*) *Geometrical Drawing.*—Use of drawing instruments and scales. Simple problems relating to lines, triangles, quadrilaterals, polygons, circles and tangents. Inscribed and circumscribed figures (No. I).

(*c*) *Machine Drawing.*—Ability to copy accurately to scale and supply additional views of simple machine details from sketches and measurements; *viz.*, rivets of different forms. Rivetted joints, formed by lap, butt, angle and T irons, screws, bolts and nuts (No. 1.)

(*d*) *Building Drawing.*—Masonry detail, brick bonds, arches over doors and windows, footing and foundations, doors and windows and timber joints. Construction of scales. Drawing plan, elevation, section from sketches, measures of a small building (No. 2.)

ESTIMATING GROUP.

(*a*) Rules for taking out quantities of roofing, flooring, wood work, iron works, doors and windows, arches, etc.

(*b*) Rules for deductions.

(*c*) Calculations of probable quantities of each kind of material required for a work.

(*d*) Taking out quantities and framing estimates from drawings of a small structure such as a village school and a road culvert (2 Estimates.)

SECOND YEAR COURSE.

ENGINEERING GROUP.

(1) Materials and Construction:—

(*a*) *Timber.*—Characteristics of good timber.

(*b*) *Masonry.*—Opening for timber beams, brick arches up to 6′ span flat, segmental, semicircular and relieving. Centres for small arches. Plastering with mortar, stair cases.

(*c*) *Foundations.*—Methods of calculation.

(*d*) *Roofs and Floors.* Terrace roofs, jack arch roofs, gable roofs, rafters, purlins and reeper, King and Queen Post Trusses. Common and Mangalore Zinc sheet roofing, tiled roofs. R. C. roofs and floors, brick, Mangalore tile, Cudappa and concrete floors.

(*e*) Emperical formula, for finding dimensions of beams, joists, rafters and bressummers, etc., and use of engineering hand books.

(2) *Bridges.*—Brief notes on different kinds of bridges, their parts and foundations.

DRAWING GROUP.

(*a*) *Topographical Drawing.*—Conventional signs, map drawing, representation of ground by contours. Section on contour plans (No. 1.)

(*b*) *Building Drawing.*—Drawing plan, elevation and sections of any Government Office (small size) or educational institution from sketches and measurements (No. 2.)

(*c*) *Machine Drawing.*—Pipes and pipe joints and machine foundations (No. 1.)

(*d*) *Bridge Drawing.*—Road culvert and a masonry arch-bridge from sketches and measurements (No. 2).

(*e*) *Road or Canal Sections.*—Plotting from levelling field books or copying old sections (No. 1).

(*f*) *Irrigation Drawing.*—Tank bund sections with a sluice and a weir (one for a minor tank and one for a major tank.)

General.—All drawings to be inked and finished properly. Students to be taken out for taking sketches and measurements of different structures.

ESTIMATING GROUP.

Irrigation.	1.	Earthwork to a tank bund, a tank sluice and a tank weir (No. 1.)
	2.	Earthwork to a portion or road or canal in cutting and embankment (1:)
Building.	3.	A dwelling house and two small office buildings (No. 3.)
Bridge.	4.	A masonry bridge (No. 1.)

General.—All estimates to be inked and completed with local rates.

THIRD YEAR COURSE.

ENGINEERING GROUP.

(*a*) *Irrigation.*—Quantity o water required for irrigation, capacity of taken, catchment basin, full tank level and maximum water level. Brief notes on tanks, reservoirs, sluices, weirs, anicuts and its allied works, channel drop and cross drainage works.

(*b*) *Hydraulics.*—Empirical formulas for finding out discharges through sluices, weirs and channels. Estimation of maximum flood discharge from basin, requisite length of weir, idea of run-off.

(*c*) *Architecture.*—Different styles and classic orders. Coping, cornices, ornamental parapets. Ideas of proportion, light and shade. Break in plan and elevations. Proportion of voids and solids.

(*d*) *Applied Mechanics and Graphic Statistics.*—Ideas of stresses, strains and elasticity, factor of safety, ultimate and working strengths of materials, bending moments and shear.

(*a*) (1) Building drawing from specifications No. 1.
(2) Do Architectural Drawing—Showing details of different columns, cornices, coping and ornamental parapets (No. 1.)
Stress diagrams of a King Post and Queen Post and other simple trusses.

(*b*) *Bridge Drawing*—(1) Ferro Concrete (No. 1.)
(1) Girder (No. 1.)

(*c*) *Irrigation Drawing* (1) Anicut and its allied works.
(2) Masonry drop and relieving weir.
(3) Syphon.
(4) Aqueduct or superpassage.
} No. 4.

(*d*) Tracing on cloth and taking blue print copies. (No. 2.)

(*e*) Reduction and enlargement to scale. Finished drawings from original maps or diagrams (No. 1.)

General.—Uses of planimeters and pantagraphs to be explained. Students to be taken out for taking sketches of structures for preparing drawings.

Estimating Group.—Taking out quantities and framing estimates from drawings of the following examples;—

(1) Building (an office or bungalow.) No. 1.
(2) A ferro-concrete bridge "
(3) A girder bridge "
(4) An anicut and its allied works. "
(5) An aqueduct "
(6) Specifications and data of costs.

General.—All estimates to be inked and completed with local rates.

DRAFTSMAN CLASS.

Distribution of Marks.

Subject	Practical or (Session)	Examination	Total
I. Engineering Group.—			
(1) Materials and construction including Architecture ..	..	50	
(2) Irrigation and Hydraulics	..	50	
(3) Applied Mechanics and Graphic Statistics ..	..	50	
Total ..	..	..	150
II. Drawing Group.—			
(*a*) Building	40	75	
(*b*) Bridge	40	75	
(*c*) Irrigation work	80	100	
Total ..	160	250	410
III. Estimating Group.—			
(a) Building	30	90	
(b) Bridge	30	90	
(c) Irrigation work	40	100	
Total ..	100	280	380
Physical exercises, attendance and general behaviour ..	60	..	60
Grand Total ..	320	680	1,000

[redacted] student should obtain 35 per cent of the marks in each group and

Powers of District Forest Officers.

READ—

Para 151 of the Report of the Public Accounts Committee on the accounts of the year 1928-29, deprecating the practice prevailing in certain Sale Depots, of allowing the delivery of timber sold to purchasers before the sale is confirmed and suggesting that the question of enhancing the powers of District Forest Officers to confirm sales up to Rs. 1,000 might be investigated by the Chief Conservator of Forests.

2. Letter No. I. 83-29, dated the 28th August 1930, from the Chief Conservator of Forests in Mysore, submitting his proposals on the subject.

ORDER THEREON NO. G. 3929-30—FT. 77-30-4, DATED 11TH OCTOBER 1930.

The District Forest Officers have at present power to confirm timber sales up to Rs. 500 in value and sales exceeding this limit require confirmation at the hands of Conservator or the Chief Conservator as the case may be. But in actual practice, in cases of sales exceeding Rs. 500 in value, the District Forest Officers are said to be in the habit of allowing the removal of timber sold before the sale is confirmed at the convenience of purchasers coming from the adjoining British Districts. This practice should in future be discontinued as it will have the effect of compelling the higher authority to confirm the sale or will lead to complications if the sales are not confirmed.

2. With a view to obviate the inconvenience that is likely to be caused to the purchasers of timber by the existing rules, Government are pleased to direct that the powers of District Forest Officers to confirm timber sales be enhanced from Rs. 500 to Rs. 1,000 subject to the following conditions:—

(1) That the rate realised in a sale does not fall short of the average of the three previous sales by more than five per cent or is more than that realised at the previous sales.

(2) That the power of confirming sales up to the limit of Rs. 1,000 should be exercised only in the case of timber.

(3) That the confirmation of sales is ordered by District Forest Officers only after payment of the full purchase money.

R. RANGA RAO,
General Secretary to Government.

Recruitment to the Establishments under Municipal Councils.

READ—

Government Order No. 6129-6192—Ml. 145-24-52, dated 19th February 1925, approving, among other matters, of the employment as a general rule of only Officials in Government Service by Town and Minor Municipal Councils for all non-gazetted executive and clerical appointments excepting a few specified therein and approving of certain rules in the matter.

2. Government Order No. L. 5347-407—Ml. 22-26-42, dated 2nd February 1927, directing that the provisions of the rules approved in the Government Order of 19th February 1925, be made applicable to the Non-Gazetted executive and clerical appointments under the Bangalore City Municipal Council and requesting the Municipal Council to submit necessary rules under Section 44 of the Mysore Municipal Regulation.

3. Correspondence ending with letter No. L. 5408—Ml. 22-26-43, dated 2nd February 1927, to the President, Mysore City Municipal Council, suggesting that the rules applicable to recruitment of Non-Gazetted executive and clerical appointments should be uniform in both the City Municipalities and requesting the submission of necessary rules for the approval of Government.

4. Government Order No. L. 6052-123—Ml. 158-26-1, dated 1st March 1927, issuing certain rules regulating recruitment, pay and other matters relating to the officers and servants of Town and Minor Municipal Councils.

ORDER NO. L. 3318-36—ML. 167-30-2, DATED 25TH OCTOBER 1930.

The rules approved in the Government Orders of 19th February 1925, 2nd February 1927 and 1st March 1927 read above, provide for th[illegible]